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| APPLICATION NO.                  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------------|-------------|----------------------|---------------------|------------------|
| 10/027,278                       | 12/21/2001  | Richard P. Rusin     | 54601US007          | 4144             |
| 26813                            | 7590        | 10/18/2006           | EXAMINER            |                  |
| MUETING, RAASCH & GEBHARDT, P.A. |             |                      | LEWIS, RALPH A      |                  |
| P.O. BOX 581415                  |             |                      | ART UNIT            |                  |
| MINNEAPOLIS, MN 55458            |             |                      | PAPER NUMBER        |                  |

3732

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/027,278

Applicant(s)

RUSIN ET AL.

Examiner

Ralph A. Lewis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 16-27 and 36-72 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 64-70 is/are allowed.
- 6) ☒ Claim(s) 16-27, 36-63, 71 and 72 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |  |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                 | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

### **Objection to lack of Drawings**

The specification is objected to under 37 CFR 1.83(a). The specification must include drawings that show every feature of the invention specified in the claims.

Therefore, the carvable mill blank, mold and handle specifically set forth in the claims must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### **Rejections based on 35 U.S.C. 112, second paragraph**

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 16, it is unclear as to what applicant is referring with the “a Thermal Shock Test” limitation. Initially it is not understood why the language is capitalized - is it a trademark? Or referencing some particular thermal shock test? The specification at page 22, lines 3+ refers to a “preferably” test and then a “[m]ore preferably” test. It is unclear if the “Thermal Shock Test” is referring only to such tests where the blank is

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raised above its glass transition temperature or would reasonably include a patient having a prosthetic tooth who put an ice cube in his mouth. The scope of the limitation is unclear and vague.

### **Rejections based on Prior Art**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 16, 18-20, 36, 50, 52 and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by Salensky (3,864,426).

Salensky discloses a method of forming a carvable mill blank 10 with polymeric resin and inorganic filler (silica) (column 3, lines 46, 57, column 4, lines 50-53) that is fabricated to withstand a thermal shock test. The blank is made by mixing a polymer resin and filler (column 3, lines 62-63) as a paste, molding it into the desired configuration (column 5, lines 43-45), minimizing discontinuities from the material by molding it under pressure (column 5, line 45) and curing the material. The curing under heat and pressure and the slow overnight cooling serve to relieve internal stress allowing the blank to pass a thermal shock test.

Claims 16, 18-20, 54 and 56-60 are rejected under 35 U.S.C. 102(e) as being anticipated by Oxman et al (5,980,253).

Applicant defines a mill blank at page 20, line 1, of the specification as being of "any desired shape or size." Oxman et al discloses molded "buttons" (column 13, lines 35-37) of the claimed polymeric materials (column 5, lines 60 and 61; column 9, lines 50,51) having a quartz filler (column 15, lines 1-20) and optionally including fluoride (column 11, line 40). The button shaped mill blanks of Oxman et al formed by mixing the materials together (column 12, line 65) in an inherent paste composition, shaping the material into desired configuration with molds, positioning the material in the molds serves to meet the broadly stated minimizing discontinuities and then curing the mill blank with light (column 13, line 32). The storage after curing at 37 C (column 13, line 35) inherently serves to meet the broadly claimed relieving internal stresses limitation. As to the ability to pass "a Thermal Shock Test", Barcol Hardness limitations and Cuttability limitations, it is presumed, absent a showing to the contrary, that the Oxman et al buttons made of the same materials as those claimed by applicant would inherently possess the claimed properties.

Claims 16, 19, 22, 24, 25, 54, 56-63 and 71 are rejected under 35 U.S.C. 102(e) as being anticipated by Holmes (6,030,606).

Applicant defines a mill blank at page 20, line 1, of the specification as being of "any desired shape or size." Holmes discloses shaped dental articles (column 1, line 64 -column 2, line 2) that may be "further fabricated or shaped" that meet applicant's broad

definition of a "mill blank" that are made of a bisGMA resin and fine quartz filler. The Holmes mill blank (as any composite) is made by mixing materials, shaping the material into its desired shape, the shaping of the material into the specified shapes (column 1, line 64 -column 2, line 2) would inherently meet the vague minimization of material discontinuities, the material is light cured (column 3, line 24) and the curing serves to inherently relieve at least some internal stresses within the blank. Since the Holmes "mill blank" is made of the same materials as those claimed by applicant it is presumed that it inherently possesses the same properties absent a showing to the contrary.

Claims 16, 19, 22-25, 54-62, 71 and 72 are rejected under 35 U.S.C. 102(b) as being anticipated by Waknine (4,544,359).

Waknine discloses crown forms (column 9, line 31) and matrix strips (column 9, lines 32-33) (which are deemed to meet applicant's broad definition "mill blank" at page 20, line 1, of the specification as being of "any desired shape or size.") comprised of a polymeric matrix (column 6, line 41 - column 7, line 10 - note further that a monomeric matrix becomes polymeric when polymerized) and a particulate component which consists essentially of an inorganic filler at 65%-79% (column 8, lines 12-13) having a size of about 0.5 to 5 microns (column 3, line 10). The Waknine blanks are made by mixing the components together in a paste, shaping the paste to the desired configuration, the shaping inherently serves to partially minimize discontinuities, the blanks are cured and the 24 hour curing (column 9, lines 42-43) serves to relieve at least some internal stresses. The Waknine "blanks" are further machined into the desired shape (column 9, lines 43-47). In regard to the limitation that the blank be

manufactured substantially free of cracks and that it be capable of passing a "Thermal Shock Test", it is noted that it is implicit in the Wakinine" reference, that the blanks are manufactured without crack defects, discontinuities and temperature expansion/contraction defects that would inhibit their use in patient's mouths as is desired (i.e. the crowns wouldn't work if they cracked and broke every time the patient had a drink of cold water ("thermal shock test")).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17, 37-40, 42-49 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salensky (3,864,426).

Removing excess paste from the molds, raising the temperature at a controlled rate, ensuring that there are no air bubbles within the composition which would weaken the structure and the use of related materials to those disclosed by Salensky would have been obvious to one of ordinary skill in the art as a matter of routine practice.

Claims 17, 21, 55 and 61-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oxman et al (5,980,253).

Removing excess paste from the molds, the use of other conventional light curing devices, raising the temperature at a controlled rate, and including a conventional

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amount of filler would have been obvious to one of ordinary skill in the art as a matter of routine practice.

Claims 18, 21, 23, 26, 27, 55 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holmes (6,030,606).

The use of a handle to help hold the blank of column 1, lines 65-67 during the subsequent further shaping of column 2, line 1, use of a conventional light box for curing the above noted blanks and the lengthy light curing to ensure that the blank was cured throughout would have been obvious to one of ordinary skill in the art as a matter of routine in practicing the Holmes invention.

#### **Allowable Subject Matter**

Claims 64-70 are allowed.

#### **Prior Art**

Applicant's information disclosure statements of July 18, 2003, November 07, 2002, and April 05, 2002 have been considered and initialed copies enclosed herewith.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.




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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication should be directed to **Ralph Lewis** at telephone number **(571) 272-4712**. Fax (571) 273-8300. The examiner works a compressed work schedule and is unavailable every other Friday. The examiner's supervisor, Cris Rodriguez, can be reached at (571) 272-4964.

R. Lewis  
September 29, 2006



Ralph A. Lewis  
Primary Examiner  
Aw3732